

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A process for detecting the resistance of a cancer cell to oxaliplatin treatment comprising:

detecting the expression of an effector or marker gene expressing the pro-apoptotic Bax and/or Bak protein(s) in a cancer cell and in a control cell not resistant to oxaliplatin;
~~wherein reduced expression of said effector or marker gene in said cancer cell compared to a control cell not resistant to oxaliplatin~~
comparing said expression between said cancer cell and said control cell, wherein reduced expression of said effector or marker gene in said cancer cell compared to said control cell indicates that said cancer cell is resistant to oxaliplatin.

Claim 2 (Previously Presented): The process of claim 1, wherein the cancer cell is selected from the group consisting of a cell obtained from a subject having colorectal cancer, a cancer of the ovaries, a cancer of the germinal cells, a cancer of the lung, a cancer of the digestive tract, a cancer of the prostate, a cancer of the pancreas, a cancer of the small intestine, and a cancer of the stomach.

Claim 3-4 (Cancelled)

Claim 5 (Previously Presented): The process of claim 1, comprising detecting mRNA transcripts of said effector or marker gene.

Claim 6 (Withdrawn): The process of claim 1, comprising detecting the amount and/or the activity of at least one mitochondrial apoptosis protein in the cancer cells.

Claim 7 (Withdrawn): A process for *in vitro* detection of the resistance of cancer cells to oxaliplatin treatment comprising:

detecting at least one mutation indicative of deficient mitochondrial apoptosis in the case of treatment with oxaliplatin, in particular of a mutation in a region of the Bax gene containing a series of 8 deoxyguanines.

Claim 8 (Previously Presented): The process according to claim 1 comprising:

- a) determining the level of expression of said effector or marker gene in cancer cells obtained from a patient;
- b) comparing the level measured with the level measured in a corresponding control sample of cells not resistant to oxaliplatin.

Claim 9 (Withdrawn): The process according to claim 6 comprising:

contacting an antibody that recognizes a mitochondrial apoptosis protein with a sample suspected of containing an apoptosis protein, and

detecting the formation of an antigen-antibody complex between said antibody and said apoptosis protein;

wherein a reduced level of complex formation between said antibody and said apoptosis protein compared to the level in a corresponding control cell not resistant to oxaliplatin is indicative of resistance to oxaliplatin.

Claim 10 (Previously Presented): The process of claim 1, wherein a probe or primer is used to detect the expression of said effector or marker gene.

Claim 11 (Previously Presented): The process of claim 1 comprising:

- a) isolating mitochondrial DNA from a biological sample to be examined, or obtaining a cDNA from the RNA of the biological sample or from genomic DNA; and
- b) amplifying the DNA from a) using at least one primer for amplification of said effector or marker gene.

Claim 12 (Previously Presented): The process according to claim 1, comprising:

- a) contacting a nucleotide probe for said effector or marker gene with a biological sample to be analyzed for a time and under conditions suitable for hybridization to occur; and
- b) detecting hybridization.

Claim 13 (Withdrawn): A process for selection of compounds that inhibit the resistance of cancer cells to oxaliplatin comprising:

- a) adding at least one candidate compound to the cancer cells resistant to oxaliplatin;
- b) comparing the level of mitochondrial apoptosis and/or expression of at least one apoptosis gene in the presence and absence of the compound;
- c) deducing the anti-resistance effect when the level of mitochondrial apoptosis is greater after addition of the compound, or when the level of expression is greater when the gene is a gene that stimulates mitochondrial apoptosis, or when the level of expression is less when the gene is a gene that inhibits mitochondrial apoptosis.

Claims 14-18 (Cancelled)

Claim 19 (Withdrawn): A kit for diagnosis of resistance of a cancer to oxaliplatin comprising:

- a) at least one compartment suitable to contain a probe;
- b) reagents necessary for the implementation of a hybridization reaction;
- c) at least one primer and the reagents necessary for a DNA amplification reaction.

Claim 20 (Withdrawn): Cell HCT116/S as registered on 16 June 2003, under number: I-3051, with the Collection Nationale de Cultures de Microorganismes (CNCM), Pasteur Institute, Paris, France.

Claim 21 (Withdrawn): A method for using cell HCT116/S according to claim 20, or of any cell derived from this cell HCT116/S, to study the correlation between the resistance of cancer cells, most preferably colorectal, to anti-cancer treatment and the expression of a mitochondrial apoptosis gene.

Claim 22 (Withdrawn): A method of using cell HCT116/S according to claim 20, or of any cell derived from this cell HCT116/S, for the visualization and identification of a mitochondrial apoptosis gene whose expression is linked to the resistance of cancer cells, most preferably colorectal, to anti-cancer treatment.

Claim 23 (Withdrawn): A method for using cell HCT116/S according to claim 20, or of any cell derived from this cell HCT116/S, for the selection of a compound capable of stimulating mitochondrial apoptosis in a cancer cell, said compound being designed to be combined with an anti-cancer agent to which said cancer cell is resistant, most preferably said anti-cancer agent to which said cancer cell is resistant being oxaliplatin and, as the case may be, said cell is a colorectal cancer cell.

Claim 24 (Previously Presented): The process of claim 1, wherein said cancer cell is a colorectal cancer cell, and said detecting comprises detecting the level of expression of mRNA encoding Bax, wherein reduced expression of mRNA encoding Bax compared to a control cell not resistant to oxaliplatin correlates with resistance of the cancer cell to oxaliplatin.

Claims 25-26 (Cancelled)

Claim 27 (Currently Amended): A process for detecting the resistance of a cancer cell to oxaliplatin treatment comprising:

measuring the level of expression of the mRNA(s) encoding the pro-apoptotic Bax and/or Bak protein(s) in a cancer cell and in a control cell not resistant to oxaliplatin;
comparing said expression between the cancer cell and the control cell,
wherein a lower level of expression of said mRNA in the cancer cell compared to a control cell not resistant to oxaliplatin is indicative of resistance to oxaliplatin.